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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,657	12/28/2001	Sukanta Banerjee	42970-7CII	6168

7590 09/03/2008
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EXAMINER

DO, PENSEE T

ART UNIT	PAPER NUMBER
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1641

MAIL DATE	DELIVERY MODE
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09/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/032,657	Applicant(s) BANERJEE ET AL.	
	Examiner Pensee T. Do	Art Unit 1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Amendment Entry & Claims Status

The amendment filed on January 22, 2008 has been acknowledged and entered.
Claims 18-22 are being examined.

Withdrawn Rejection(s)

All rejections under 112, 1st and 2nd paragraphs in the previous office action are withdrawn herein.

New Grounds of Rejection

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 18-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 is unclear if the optical signal and the optically distinguishable signature are different. If these are different, then are these generated from two different fluorescent molecules or labels or the same fluorescent encoded on the microparticle?

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walt et al. (US 7,115,884 filed on October 6, 1997) in view of Wang (US 6,013,531) and further in view of Zhou (US 6,355,491).

Walt teaches a method of multiplex analysis of analytes in a solution, comprising providing a population of microspheres having a plurality of different subpopulations, each subpopulation comprises microspheres having distinct optical response signature (see col. 5, lines 5-30) or each microsphere is encoded with a fluorescent dye (see col. 11, lines 6-10) and has capture moieties coated thereon for binding to the target analyte (see tables II and III); the microspheres are assembled into an array and a sample is added to such array; illuminating the array; decoding the array by comparing the response of the entire sensor array to a known analyte or to a library of optical response signatures for its corresponding bead subpopulation type, where the optical response signature to various analytes has been previously measured and recorded. (see col. 5, lines 5-29). The beads and array images are recorded with a CCD frame transfer camera (see col. 17, lines 38-40).

However, Walt fails to teach using magnetic beads and applying a magnetic field at various strength to form an assembly of beads; Walt also fails to teach replacing the first solution with a second solution.

Wang teaches fluorescent magnetic beads for use as markers in assay comprising a polymeric core coated evenly with a layer of polymer containing magnetically responsive metal oxide and a fluorescent dye or a combination of fluorescent dyes. (see col. 1, line 40-col. 2, line 9). Wang teaches using the magnetic

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particles in an assay by incubating the magnetic particles with a sample, magnetically separate them from the sample (first solution) and wash three times and resuspend in 30 ul of IBS (see example 35).

It would have been obvious to one of ordinary skills in the art to use fluorescent magnetic beads as those taught by Wang as particles in the method of Walt because the magnetic fluorescent particle in Walt can be used as a separation means and as a label at the same time and thus avoid the use of a second label molecule. Regarding claim 21, it is well known to one of ordinary skills in the art that after magnetic separation, a wash step must be performed to ensure all the non-bound molecules from the sample which might interfere with the detection are removed and a step of resuspending the magnetic particles bound with analytes in a buffer (second solution) is also a must in order to carry out the detection step as taught by Wang. It would have been obvious to one of ordinary skills in the art to replace the first solution (sample) with a second solution such as a buffer (IBS) as taught by Wang in the method of Walt to disperse the particles in such solution as a preparation for the detection step.

However, Walt and Wang fail to teach applying a various strength magnetic field to the magnetic beads to form an assembly of beads.

Zhou teaches using magnetic field to attract magnetic particles to the surface of a biochip. (see abstract).

It would have been obvious to one of ordinary skills in the art to immobilize magnetic particles to a substrate using a magnetic field according to the method taught by Zhou to assemble the magnetic particles into an array for use in the combined

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method of Walt and Wang so that analysis can be performed directly on a chip for large scale identification, mapping, and genotyping of single nucleotide polymorphisms in the human genome or for high throughput drug screenings as taught by Zhou (see Zhou col. 1, lines 33-65).

Response to Arguments

Applicant's arguments with respect to claims 18-22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pensee T. Do whose telephone number is 571-272-0819. The examiner can normally be reached on Monday-Friday, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Pensee T. Do/
Examiner, Art Unit 1641
August 29, 2008

/Mark L. Shibuya, Ph.D./
Supervisory Patent Examiner, Art Unit 1641